

SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> Therapeutic agent for chondroma and/or chondrosarcoma

<130> PH-1865-PCT

<150> JP 2002-334081

<151> 2002-11-18

<160> 85

<170> PatentIn Ver. 2.1

<210> 1

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<212> DNA

<213> Artificial Sequence

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<223> Inventor; Yoshikawa, Hideki; Miyaji, Takahiro

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<400> 1

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38

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28

<210> 4

<211> 29

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<223> Description of Artificial Sequence:Synthetic DNA

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29

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<213> Artificial Sequence

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gttttcccag tcacgac

17

<210> 6

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<223> Description of Artificial Sequence:Synthetic DNA

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17

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<400> 7

gtctaagctt ccaccatgaa acttcgggct c

31

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<223> Description of Artificial Sequence:Synthetic DNA

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 9

gtctgaattc aagcttccac catggggttt gggctg

36

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<212> DNA

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<210> 11

<211> 109

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 11

gtctgaattc aagcttagta cttggccagc ccaaggccaa ccccacggtc accctgttcc 60
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<210> 12

<211> 110

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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acagctcccg ggtagaagtc actgatcaga cacactagtg tggccttgtt 110

<210> 13

<211> 98

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 13

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<210> 14

<211> 106

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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106

<210> 15

<211> 43

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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43

<210> 16

<211> 20

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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tgttgaattc ttactatgaa

20

<210> 17

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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caacaagtac gcggccagca gctacctgag cctgacgcc

39

<210> 18

<211> 39

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 18

gtagctgctg gccgcgtact tgttgttgct ctgtttgga

39

<210> 19

<211> 46

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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46

<210> 20

<211> 34

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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tgttgaattc ttactaacac tctcccctgt tgaa

34

<210> 21

<211> 35

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 21

gtctaagctt ccaccatggc ctggactcct ctctt

35

<210> 22

<211> 48

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 22

tgttgaattc agatctaact acttacctag gacagtgacc ttggtecc

48

<210> 23

<211> 128

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 23

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ggtgtccagt gtcaggtgca gctggtggag tctgggggag gcgtggtcca gcctgggagg 120
tccctgag 128

<210> 24

<211> 125

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 24

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atctccagag acaattccaa gaacacgctg tatctgcaaa tgaacagcct gagagctgag 120
gacac 125

<210> 25

<211> 132

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 25

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caagacatgc catagctact gaaggatgaat ccagaggctg cacaggagag tctcagggac 120
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<210> 26

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<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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atagtagtct gtctcgaca gtaatacaca gccgtgtcct cagctctcag             110
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<210> 27

<211> 30

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 27

gtctaagctt ccacatggg gtttgggctg 30

<210> 28

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 28

tgttgatcc ctgaggagac ggtgaccagg 30

<210> 29

<211> 133

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 29

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gttctttctc ccagcttgtg ctgactcaat cgccctctgc ctctgcctcc ctgggagcct 120

cgggtcaagct cac

133

<210> 30

<211> 118

<212> DNA

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<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 30

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ctggggctga gcgctacctc accatctcca gcctccagtc tgaggatgag gctgacta 118

<210> 31

<211> 128

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 31

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tgatgccatt caatggtgta cgtactgtgc tgactactca aggtgcaggt gagcttgacc 120
gaggctcc 128

<210> 32

<211> 114

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 32

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ttgttcctta attgtatcac ccacaccaca gtaatagtca gcctcatcct caga 114

<210> 33

<211> 17

<212> DNA

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<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 33

acaaagcttc caccatg 17

<210> 34

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 34

cttggatccg ggctgacct

19

<210> 35

<211> 75

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 35

cttggatccg ggctgacctt ggacggtcag tttggtcctt ccgccgaaca cgtacacaaa 60

ttgttcctta attgt

75

<210> 36

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 36

aaaggatcct taagatccat caagtaccga gggggcttct ctg

43

<210> 37

<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 37

acaaagctta gcgctacctc accatctcca gcctccagcc tgagga 46

<210> 38

<211> 111

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 38

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<210> 39

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 39

cttctctggc tgctgctgat accattcaat ggtgtacgta ct 42

<210> 40

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 40

cgagggccct tctctggctg ctgctg 26

<210> 41

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 41

gagaagggcc ctargtacst gatgawcctt aagca 35

<210> 42

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 42

cacgaattca ctatcgattc tggaaccttc agagg

35

<210> 43

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 43

ggcttggagc tcctcaga

18

<210> 44

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 44

gacagtgggtt caaagttttt

20

<210> 45

<211> 118

<212> PRT

<213> Mus musculus

<400> 45

Gln Leu Val Leu Thr Gln Ser Ser Ser Ala Ser Phe Ser Leu Gly Ala
1 5 10 15
Ser Ala Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr
20 25 30
Ile Glu Trp Tyr Gln Gln Gln Pro Leu Lys Pro Pro Lys Tyr Val Met
35 40 45
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
50 55 60
Arg Phe Ser Gly Ser Ser Ser Gly Ala Asp Arg Tyr Leu Ser Ile Ser
65 70 75 80
Asn Ile Gln Pro Glu Asp Glu Ala Met Tyr Ile Cys Gly Val Gly Asp
85 90 95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Val
100 105 110
Thr Val Leu Gly Gln Pro
115

<210> 46

<211> 118

<212> PRT

<213> Mus musculus

<400> 46

Glu Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Lys Pro Gly Gly

1	5	10	15												
Ser	Leu	Lys	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr
	20		25		30										
Gly	Met	Ser	Trp	Ile	Arg	Gln	Thr	Pro	Asp	Lys	Arg	Leu	Glu	Trp	Val
	35		40		45										
Ala	Thr	Ile	Ser	Ser	Gly	Gly	Ser	Tyr	Thr	Tyr	Tyr	Pro	Asp	Ser	Val
	50		55		60										
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ala	Lys	Asn	Thr	Leu	Tyr
	65		70		75										80
Leu	Gln	Met	Ser	Ser	Leu	Lys	Ser	Glu	Asp	Thr	Ala	Met	Phe	Tyr	Cys
			85		90										95
Ala	Arg	Gln	Thr	Thr	Met	Thr	Tyr	Phe	Ala	Tyr	Trp	Gly	Gln	Gly	Thr
	100		105		110										
Leu	Val	Thr	Val	Ser	Ala										
	115														

<210> 47

<211> 116

<212> PRT

<213> Homo sapiens

<400> 47

Gln	Leu	Val	Leu	Thr	Gln	Ser	Pro	Ser	Ala	Ser	Ala	Ser	Leu	Gly	Ala
1		5		10		15									
Ser	Val	Lys	Leu	Thr	Cys	Thr	Leu	Ser	Ser	Gln	His	Ser	Thr	Tyr	Thr
	20		25		30										
Ile	Glu	Trp	His	Gln	Gln	Gln	Pro	Glu	Lys	Gly	Pro	Arg	Tyr	Leu	Met
	35		40		45										
Lys	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly	Ile	Pro	Asp

50	55	60	
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser			
65	70	75	80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp			
	85	90	95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu			
	100	105	110
Thr Val Leu Gly			
	115		

<210> 48

<211> 118

<212> PRT

<213> Homo sapiens

<400> 48

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala			
1	5	10	15
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr			
	20	25	30
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys Tyr Leu Met			
	35	40	45
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp			
	50	55	60
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser			
65	70	75	80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp			
	85	90	95

Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu

100

105

110

Thr Val Leu Gly Gln Pro

115

<210> 49

<211> 118

<212> PRT

<213> Homo sapiens

<400> 49

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala

1

5

10

15

Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr

20

25

30

Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys Tyr Val Met

35

40

45

Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp

50

55

60

Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser

65

70

75

80

Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp

85

90

95

Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu

100

105

110

Thr Val Leu Gly Gln Pro

115

<210> 50

<211> 118

<212> PRT

<213> Homo sapiens

<400> 50

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
1 5 10 15
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr
20 25 30
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Leu Met
35 40 45
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
50 55 60
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
65 70 75 80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp
85 90 95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
100 105 110
Thr Val Leu Gly Gln Pro
115

<210> 51

<211> 118

<212> PRT

<213> Homo sapiens

<400> 51

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala

1	5	10	15
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr			
20	25	30	
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Val Met			
35	40	45	
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp			
50	55	60	
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser			
65	70	75	80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly Val Gly Asp			
85	90	95	
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu			
100	105	110	
Thr Val Leu Gly Gln Pro			
115			

<210> 52

<211> 118

<212> PRT

<213> Homo sapiens

<400> 52

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala			
1	5	10	15
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr			
20	25	30	
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys Tyr Leu Met			
35	40	45	
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp			

50	55	60	
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser			
65	70	75	80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly Val Gly Asp			
	85	90	95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu			
	100	105	110
Thr Val Leu Gly Gln Pro			
115			

<210> 53

<211> 118

<212> PRT

<213> Homo sapiens

<400> 53

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala			
1	5	10	15
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr			
	20	25	30
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Leu Met			
	35	40	45
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp			
50	55	60	
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser			
65	70	75	80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly Val Gly Asp			
	85	90	95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu			

	100	105	110
Thr Val Leu Gly Gln Pro			
115			
<210> 54			
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<213> Homo sapiens			
<400> 54			
Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala			
1 5 10 15			
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr			
20 25 30			
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys Tyr Val Met			
35 40 45			
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp			
50 55 60			
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser			
65 70 75 80			
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly Val Gly Asp			
85 90 95			
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu			
100 105 110			
Thr Val Leu Gly Gln Pro			
115			

<210> 55
 <211> 118

<212> PRT

<213> Homo sapiens

<400> 55

Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser Leu Gly Ala
1 5 10 15
Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser Thr Tyr Thr
20 25 30
Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg Tyr Val Met
35 40 45
Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly Ile Pro Asp
50 55 60
Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu Thr Ile Ser
65 70 75 80
Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly Val Gly Asp
85 90 95
Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly Thr Lys Leu
100 105 110
Thr Val Leu Gly Gln Pro
115

<210> 56

<211> 118

<212> PRT

<213> Homo sapiens

<400> 56

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Thr Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gln Thr Thr Met Thr Tyr Phe Ala Tyr Trp Gly Gln Gly Thr
 100 105 110
 Leu Val Thr Val Ser Ser
 115

<210> 57

<211> 411

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(411)

<220>

<221> mat_peptide

<222> (58)..(411)

<400> 57

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gtc cag tgt gag gtg caa ctg gtg gag tct ggg gga gac tta gtg aag	96
Val Gln Cys Glu Val Gln Leu Val Glu Ser Gly Gly Asp Leu Val Lys	
-1 1 5 10	
cct gga ggg tcc ctg aaa ctc tcc tgt gca gcc tct gga ttc act ttc	144
Pro Gly Gly Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe	
15 20 25	
agt agc tat ggc atg tct tgg att cgc cag act cca gac aag agg ctg	192
Ser Ser Tyr Gly Met Ser Trp Ile Arg Gln Thr Pro Asp Lys Arg Leu	
30 35 40 45	
gag tgg gtc gca acc att agt agt ggt ggt agt tac acc tac tat cca	240
Glu Trp Val Ala Thr Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro	
50 55 60	
gac agt gtg aag ggg cga ttc acc atc tcc aga gac aat gcc aag aac	288
Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn	
65 70 75	
acc cta tac ctg caa atg agc agt ctg aag tct gag gac aca gcc atg	336
Thr Leu Tyr Leu Gln Met Ser Ser Leu Lys Ser Glu Asp Thr Ala Met	
80 85 90	
ttt tac tgt gca aga cag act act atg act tac ttt gct tac tgg ggc	384
Phe Tyr Cys Ala Arg Gln Thr Thr Met Thr Tyr Phe Ala Tyr Trp Gly	
95 100 105	
caa ggg act ctg gtc act gtc tct gca	411
Gln Gly Thr Leu Val Thr Val Ser Ala	
110 115	

<210> 58

<211> 411

<212> DNA

<213> Homo sapiens

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<222> (1)..(411)

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<222> (58)..(411)

<400> 58

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Met Gly Phe Gly Leu Ser Trp Val Phe Leu Val Ala Leu Leu Arg Gly
      -15          -10          -5
gtc cag tgt cag gtg cag ctg gtg gag tct ggg gga ggc gtg gtc cag 96
Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln
      -1  1          5          10
cct ggg agg tcc ctg aga ctc tcc tgt gca gcc tct gga ttc acc ttc 144
Pro Gly Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe
      15          20          25
agt agc tat ggc atg tct tgg gtc cgc cag gct cca ggc aag ggg ctg 192
Ser Ser Tyr Gly Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu
      30          35          40          45
gag tgg gtg gca acc att agt agt ggt ggt agt tac acc tac tat cca 240
Glu Trp Val Ala Thr Ile Ser Ser Gly Gly Ser Tyr Thr Tyr Tyr Pro
      50          55          60
gac agt gtg aag ggg cga ttc acc atc tcc aga gac aat tcc aag aac 288
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Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn
 65 70 75
 acg ctg tat ctg caa atg aac agc ctg aga gct gag gac acg gct gtg 336
 Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val
 80 85 90
 tat tac tgt gcg aga cag act act atg act tac ttt gct tac tgg ggc 384
 Tyr Tyr Cys Ala Arg Gln Thr Thr Met Thr Tyr Phe Ala Tyr Trp Gly
 95 100 105
 cag gga acc ctg gtc acc gtc tcc tca 411
 Gln Gly Thr Leu Val Thr Val Ser Ser
 110 115

<210> 59

<211> 11

<212> PRT

<213> Homo sapiens

<400> 59

Lys Ala Ser Gln Asp Val Asn Thr Ala Val Ala
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<212> PRT

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Ser Ala Ser Asn Arg Tyr Thr
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<213> Homo sapiens

<400> 61

Gln Gln His Tyr Ser Thr Pro Phe Thr

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Pro Tyr Trp Met Gln

1

5

<210> 63

<211> 16

<212> PRT

<213> Homo sapiens

<400> 63

Ser Ile Phe Gly Asp Gly Asp Thr Arg Tyr Ser Gln Lys Phe Lys Gly

1

5

10

15

<210> 64

<211> 11

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<400> 64

Gly Leu Arg Arg Gly Gly Tyr Tyr Phe Asp Tyr

1 . 5 10

<210> 65

<211> 411

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(411)

<220>

<221> mat_peptide

<222> (58)..(411)

<400> 65

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-15 -10 -5

tct ttc tcc caa ctt gtg ctc act cag tca tct tca gcc tct ttc tcc 96

Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Ser Ser Ala Ser Phe Ser

-1 1 5 10

ctg gga gcc tca gca aaa ctc acg tgc acc ttg agt agt cag cac agt 144

Leu Gly Ala Ser Ala Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag caa cag cca ctc aag cct cct aag	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Leu Lys Pro Pro Lys	
30 35 40 45	
tat gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tct gga tcc agc tct ggt gct gat cgc tac ctt	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Asp Arg Tyr Leu	
65 70 75	
agc att tcc aac atc cag cca gaa gat gaa gca atg tac atc tgt ggt	336
Ser Ile Ser Asn Ile Gln Pro Glu Asp Glu Ala Met Tyr Ile Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tat gtt ttc ggc ggt ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aag gtc act gtc cta ggt cag ccc	411
Thr Lys Val Thr Val Leu Gly Gln Pro	
110 115	

<210> 66

<211> 411

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(411)

<220>

<221> mat_peptide

<222> (58)..(411)

<400> 66

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      -15          -10          -5
tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc 96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser
      -1  1          5          10
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt 144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
      15          20          25
acg tac acc att gaa tgg cat cag cag cag cca gag aag ggc cct cgg 192
Thr Tyr Thr Ile Glu Trp His Gln Gln Gln Pro Glu Lys Gly Pro Arg
      30          35          40          45
tac ttg atg aaa ctt aag caa gat gga agc cac agc aca ggt gat ggg 240
Tyr Leu Met Lys Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly
      50          55          60
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc 288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu
      65          70          75
acc atc tcc agc ctc cag tct gag gat gag gct gac tat tac tgt ggt 336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly
      80          85          90
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg 384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly
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95	100	105	
acc aaa ctg acc gtc cta ggt cag ccc			411
Thr Lys Leu Thr Val Leu Gly Gln Pro			
110	115		

<210> 67

<211> 411

<212> DNA

<213> Homo sapiens

<220>

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<222> (1)..(411)

<220>

<221> mat_peptide

<222> (58)..(411)

<400> 67

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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag	192

Thr	Tyr	Thr	Ile	Glu	Trp	Tyr	Gln	Gln	Gln	Pro	Glu	Lys	Gly	Pro	Lys		
30						35				40					45		
tac	ctg	atg	gat	ctt	aag	caa	gat	gga	agc	cac	agc	aca	ggt	gat	ggg	240	
Tyr	Leu	Met	Asp	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly		
				50				55					60				
att	cct	gat	cgc	ttc	tca	ggc	tcc	agc	tct	ggg	gct	gag	cgc	tac	ctc	288	
Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Glu	Arg	Tyr	Leu		
				65				70					75				
acc	atc	tcc	agc	ctc	cag	tct	gag	gat	gag	gct	gac	tat	tac	tgt	ggt	336	
Thr	Ile	Ser	Ser	Leu	Gln	Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gly		
				80				85					90				
gtg	ggt	gat	aca	att	aag	gaa	caa	ttt	gtg	tac	gtg	ttc	ggc	gga	ggg	384	
Val	Gly	Asp	Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly		
				95				100					105				
acc	aaa	ctg	acc	gtc	cta	ggc	cag	ccc								411	
Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln	Pro									
110							115										

<210> 68

<211> 411

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<221> mat_peptide

<222> (58).. (411)

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atg gcc tgg act cct ctc ttc ttc ttc ttt gtt ctt cat tgc tca ggt	48
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-15 -10 -5	
tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
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ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys	
30 35 40 45	
tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat tac tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	

110

115

<210> 69

<211> 411

<212> DNA

<213> Homo sapiens

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<221> CDS

<222> (1)..(411)

<220>

<221> mat_peptide

<222> (58)..(411)

<400> 69

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Met Ala Trp Thr Pro Leu Phe Phe Phe Phe Val Leu His Cys Ser Gly
          -15          -10          -5
tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc 96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser
          -1   1          5          10
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt 144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
          15          20          25
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg 192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg
          30          35          40          45
tac ctg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg 240

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Tyr	Leu	Met	Asp	Leu	Lys	Gln	Asp	Gly	Ser	His	Ser	Thr	Gly	Asp	Gly		
				50				55					60				
att	cct	gat	cgc	ttc	tca	ggc	tcc	agc	tct	ggg	gct	gag	cgc	tac	ctc	288	
Ile	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Ser	Ser	Gly	Ala	Glu	Arg	Tyr	Leu		
				65				70					75				
acc	atc	tcc	agc	ctc	cag	tct	gag	gat	gag	gct	gac	tat	tac	tgt	ggt	336	
Thr	Ile	Ser	Ser	Leu	Gln	Ser	Glu	Asp	Glu	Ala	Asp	Tyr	Tyr	Cys	Gly		
				80				85					90				
gtg	ggt	gat	aca	att	aag	gaa	caa	ttt	gtg	tac	gtg	ttc	ggc	gga	ggg	384	
Val	Gly	Asp	Thr	Ile	Lys	Glu	Gln	Phe	Val	Tyr	Val	Phe	Gly	Gly	Gly		
				95				100					105				
acc	aaa	ctg	acc	gtc	cta	ggc	cag	ccc								411	
Thr	Lys	Leu	Thr	Val	Leu	Gly	Gln	Pro									
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<210> 70

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<222> (58)..(411)

<400> 70

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tct ttc tcc cag ctt gtg ctg act caa tgc ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
-1 1 5 10	
ctg gga gcc tgc gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg	
30 35 40 45	
tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat tac tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
95 100 105	
acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	
110 115	

<210> 71

<211> 411

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(411)

<220>

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<222> (58)..(411)

<400> 71

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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc 96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser
          -1   1          5          10
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt 144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
          15          20          25
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag 192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys
          30          35          40          45
tac ctg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg 240
Tyr Leu Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly
          50          55          60
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc 288
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Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu
 65 70 75
 acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt 336
 Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly
 80 85 90
 gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg 384
 Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly
 95 100 105
 acc aaa ctg acc gtc cta ggc cag ccc 411
 Thr Lys Leu Thr Val Leu Gly Gln Pro
 110 115

<210> 72

<211> 411

<212> DNA

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<220>

<221> CDS

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<220>

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<222> (58)..(411)

<400> 72

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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc	96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser	
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ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt	144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser	
15 20 25	
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg	192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg	
30 35 40 45	
tac ctg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg	240
Tyr Leu Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly	
50 55 60	
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc	288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu	
65 70 75	
acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt	336
Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly	
80 85 90	
gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg	384
Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly	
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acc aaa ctg acc gtc cta ggc cag ccc	411
Thr Lys Leu Thr Val Leu Gly Gln Pro	
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<210> 73

<211> 411

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<213> Homo sapiens

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tct ttc tcc cag ctt gtg ctg act caa tcg ccc tct gcc tct gcc tcc 96
Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser
      -1  1          5          10
ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt 144
Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
      15          20          25
acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct aag 192
Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Lys
      30          35          40          45
tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg 240
Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly
      50          55          60
att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc 288
Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu
      65          70          75
acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt 336
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Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly
 80 85 90
 gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg 384
 Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly
 95 100 105
 acc aaa ctg acc gtc cta ggc cag ccc 411
 Thr Lys Leu Thr Val Leu Gly Gln Pro
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<210> 74

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<222> (58)..(411)

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 Ser Phe Ser Gln Leu Val Leu Thr Gln Ser Pro Ser Ala Ser Ala Ser
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ctg gga gcc tcg gtc aag ctc acc tgc acc ttg agt agt cag cac agt 144
 Leu Gly Ala Ser Val Lys Leu Thr Cys Thr Leu Ser Ser Gln His Ser
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 acg tac acc att gaa tgg tat cag cag cag cca gag aag ggc cct agg 192
 Thr Tyr Thr Ile Glu Trp Tyr Gln Gln Gln Pro Glu Lys Gly Pro Arg
 30 35 40 45
 tac gtg atg gat ctt aag caa gat gga agc cac agc aca ggt gat ggg 240
 Tyr Val Met Asp Leu Lys Gln Asp Gly Ser His Ser Thr Gly Asp Gly
 50 55 60
 att cct gat cgc ttc tca ggc tcc agc tct ggg gct gag cgc tac ctc 288
 Ile Pro Asp Arg Phe Ser Gly Ser Ser Ser Gly Ala Glu Arg Tyr Leu
 65 70 75
 acc atc tcc agc ctc cag tct gag gat gag gct gac tat atc tgt ggt 336
 Thr Ile Ser Ser Leu Gln Ser Glu Asp Glu Ala Asp Tyr Ile Cys Gly
 80 85 90
 gtg ggt gat aca att aag gaa caa ttt gtg tac gtg ttc ggc gga ggg 384
 Val Gly Asp Thr Ile Lys Glu Gln Phe Val Tyr Val Phe Gly Gly Gly
 95 100 105
 acc aaa ctg acc gtc cta ggc cag ccc 411
 Thr Lys Leu Thr Val Leu Gly Gln Pro
 110 115

<210> 75

<211> 34

<212> PRT

<213> Homo sapiens

<400> 75

Ala Val Ser Glu His Gln Leu Leu His Asp Lys Gly Lys Ser Ile Gln

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Arg	Arg	Phe	Phe
Leu	His	His	Leu
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His			
	20	25	30
Thr	Ala		

<210> 76

<211> 20

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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 76

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<210> 77

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 77

cccagccgtg gttatcctgg a 21

<210> 78

<211> 20

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

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gtccaccaag aagctgagcg

20

<210> 79

<211> 20

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 79

ttggtgcaca gggccttgag

20

<210> 80

<211> 21

<212> DNA

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<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 80

caggaaaacc aggtctcgat g

21

<210> 81

<211> 21

<212> DNA

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 81

ttgaggccct tagttgctat g

21

<210> 82

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 82

agagtgtgc cccatctgcc caactgacct

30

<210> 83

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 83

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30

<210> 84

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

<400> 84

cggactcgtc atactcctgc tt

22

<210> 85

<211> 21

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:Synthetic DNA

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21